

What is claimed is:

1. In a system comprised of a plurality of objects and at least one cache, wherein each object has a key associated therewith and is capable of having different values for at least two of a plurality of different contexts, a method for caching at least some of the plurality of objects, comprising the steps of

maintaining a cache directory structure in which at least two different values are capable of being associated with at least one of the plurality of objects, each of the at least two different values corresponding to a different context;

identifying an object to be cached from among the plurality of objects and a context from among the plurality of different contexts; and

storing the identified object in the at least one cache based upon the key associated therewith and the identified context.

2. The method according to claim 1, wherein the at least one cache maintains at least a portion of a data structure for storing multiple versions of the identified object and said storing step further comprises the step of

identifying the at least a portion of the data structure  
from the key associated with the identified object.

3. The method according to claim 1, wherein said  
storing step further comprises the steps of:

5       generating a composite index from the key associated  
with the identified object and the identified context; and  
      storing the identified object based upon the composite  
index.

10       4. The method according to claim 1, further  
comprising the step of looking up a given object from among  
the plurality of objects based upon a key associated with  
the given object and one of the plurality of different  
contexts.

15       5. The method according to claim 1, further  
comprising the step of deleting a cached object based upon a  
key associated with the cached object and one of the  
plurality of different contexts.

6. The method according to claim 1, further  
comprising the steps of:

maintaining a data structure that includes at least one key associated with at least one given object from among the plurality of objects, the at least one given object being cached within one of the plurality of different contexts;

5 and

deleting the at least given object by identifying the at least one object in the data structure based upon the at least one key associated therewith.

7. The method according to claim 1, further  
10 comprising the step of copying at least one given object from among the plurality of objects that is cached under one of the plurality of contexts to another one of the plurality of contexts.

8. The method according to claim 1, wherein the  
15 plurality of different contexts represent transactional contexts.

9. The method according to claim 1, wherein cached objects represent query results.

10. The method according to claim 1, wherein said  
20 method is implemented by a program storage device readable

by machine, tangibly embodying a program of instructions executable by the machine to perform said method steps.

11. In a system comprised of at least one object capable of having a plurality of values within a plurality of different contexts, a method for propagating at least one of the plurality of values among the plurality of different contexts, said method comprising the steps of:

maintaining at least one dependency between the at least one object and underlying data;

10 identifying the at least one of the plurality of values for the at least one object within a context from among the plurality of contexts; and

15 propagating the at least one of the plurality of values to at least one other context from among the plurality of contexts, wherein the at least one object has identical dependencies in the context and the at least one other context.

12. The method according to claim 11, wherein the underlying data is dependent underlying data, and at least some of the plurality of values are derived from the dependent underlying data.

13. The method according to claim 11, wherein the underlying data is dependent underlying data, and at least some of the plurality of values are query results derived from the dependent underlying data.

5 14. The method according to claim 11, wherein the plurality of different contexts are transactional contexts.

15. The method according to claim 11, wherein cached objects are query results and the plurality of different contexts are transactional contexts.

10 16. The method according to claim 11, wherein said method is implemented by a program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform said method steps.

15 17. In a system comprised of at least one object capable of having a plurality of values within a plurality of different contexts, wherein a value from among the plurality of values of the at least one object depends on underlying data, a method for maintaining dependencies between the at least one object and the underlying data when  
20 effects from a context among the plurality of contexts are

realized within at least one other context among the plurality of contexts, said method comprising the steps of:

recording at least one event that occurs with the context, wherein the at least one event is capable of

5 affecting dependencies between the at least one object and the underlying data within the at least one other context;

realizing, within the at least one other context, changes to the underlying data performed under the context; and

10 replaying, within the at least one other context, the at least one event recorded within the context.

18. The method according to claim 17, wherein the plurality of contexts are transactional contexts and said realizing step comprises the step of committing the context  
15 as a transactional context.

19. The method according to claim 17, wherein said method is implemented by a program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform said method steps.

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20. A computer system, comprising:

at least one client;

at least one server;

5 a cache adapted to allow multiple copies of a same  
object to be cached under different contexts; and  
a context manager adapted to manage the different  
contexts.

21. The system according to claim 20, wherein said  
context manager is a transaction manager.

10 22. The system according to claim 20, wherein said  
context manager is a transaction manager adapted to support  
lock-based, pessimistic concurrency control.

15 23. The system according to claim 20, wherein said  
context manager is a transaction manager adapted to support  
optimistic concurrency control.